Instructions for using
SINGER
ELECTRIC SEWING MACHINE
Model 15·91

SINGER
SEWING
MACHINES

THE SINGER MANUFACTURING COMPANY

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SINGER* ELECTRIC SEWING MACHINE

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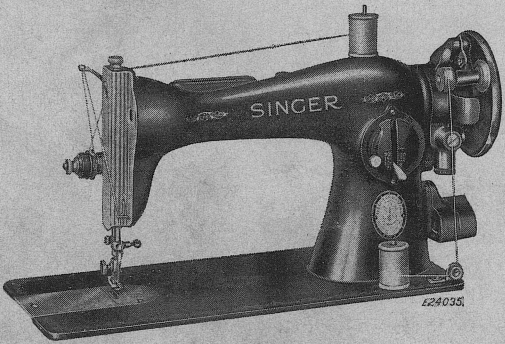

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WHEN YOU OWN A SINGER 15-91

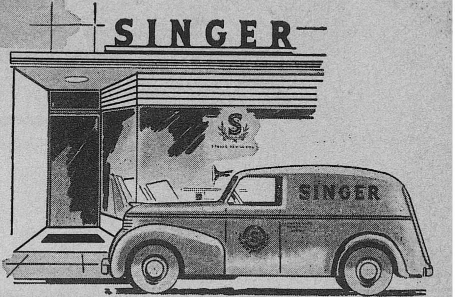
You own a machine with a tradition of superior craftsmanship—a tradition you will recognize in the smooth, efficient operation of this motor-driven electric sewing machine. Operating either forward or backward with an oscillating motion, it forms a lock stitch. The machine and the foot- or knee-operated speed control are stored in any one of a variety of versatile and attractive sewing machine cabinets with extra room for sewing accessories.

TO GET THE MOST ENJOYMENT FROM YOUR SINGER

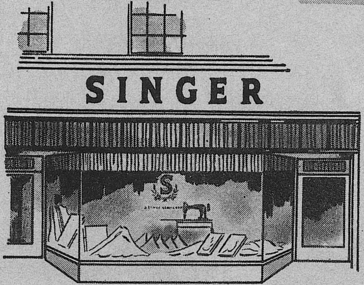
You are entitled to sewing lessons when you become the owner of a new SINGER. A skilled, SINGER-trained teacher personally guides you and assists you in learning the fundamentals of home sewing. Other courses embracing all phases of home sewing are available at low cost.

SINGER* SERVICE

Wherever you go you will find expert, dependable SINGER Service nearby. SINGER is interested in helping you keep your SINGER Sewing Machine in top condition. That's why it makes sense to call your SINGER Representative if your machine ever requires attention. He will submit a written estimate for your approval. Look for the familiar red "S" on your SINGER SEWING CENTER and the handy SINGER Service Car.



EVERYTHING FOR THE WOMAN WHO SEWS



The answer to your sewing needs is at your SINGER SEWING CENTER. There you will find a wide choice of patterns, buttons and thread, as well as Finishing Services such as covering buttons, hemstitching, making belts and buckles, to mention a few. Look under Singer Sewing Machine Company in your telephone directory for the SINGER SEWING CENTER nearest you.

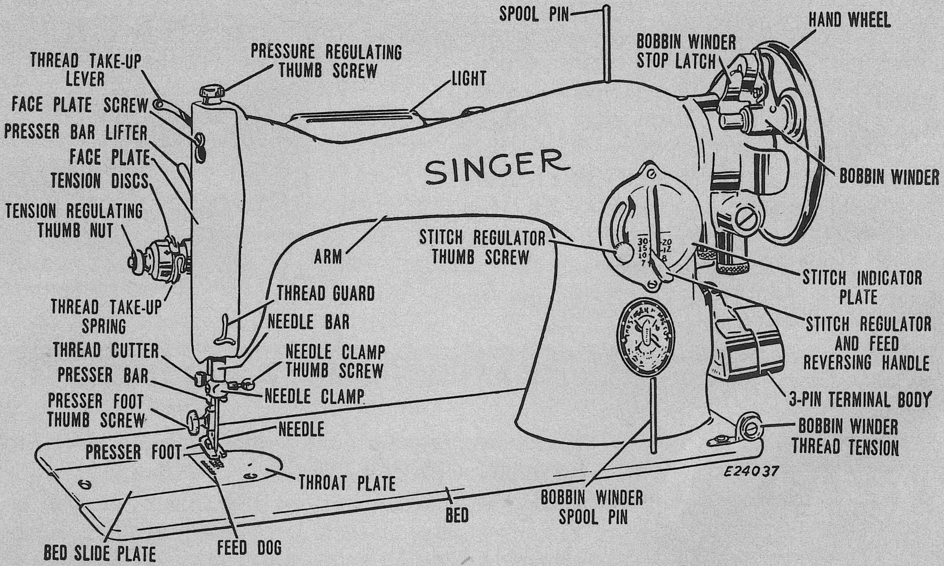

SPOOL PIN
HAND WHEEL
BOBBIN WINDER STOP LATCH
PRESSURE REGULATING THUMB SCREW
LIGHT
THREAD TAKE-UP LEVER
FACE PLATE SCREW
PRESSER BAR LIFTER
FACE PLATE
TENSION DISCS
TENSION REGULATING THUMB NUT
SINGER
BOBBIN WINDER
ARM
STITCH REGULATOR THUMB SCREW
STITCH INDICATOR PLATE
THREAD GUARD
THREAD TAKE-UP SPRING
NEEDLE BAR
STITCH REGULATOR AND FEED REVERSING HANDLE
THREAD CUTTER
NEEDLE CLAMP THUMB SCREW
PRESSER BAR
NEEDLE CLAMP
3-PIN TERMINAL BODY
PRESSER FOOT THUMB SCREW
NEEDLE
BOBBIN WINDER THREAD TENSION
PRESSER FOOT
THROAT PLATE
E24037
BED
BOBBIN WINDER SPOOL PIN
BED SLIDE PLATE
FEED DOG

Fig. 2. Names of Principal Parts of Machine 15 -91

ELECTRICAL INFORMATION

Motor

The SINGER electric motor, located at back of machine, is regularly furnished for operation on a direct current of 110-120 volts or on alternating current of 110-120 volts, 25 to 75 cycles. Special motors can be furnished for direct or alternating current for any voltage between 50 and 250, and for 32 volts direct current.

To Connect Machine to Electric Service Line

Before connecting the machine to electric service line, be sure that the voltage and the number of cycles stamped on the motor nameplate are within the range marked on the electric meter installed by the electric power company.

Push terminal plug at one end of electric cord on the three-pin terminal block (see **Fig. 2, page 4**) at the right of machine and connect plug at other end of cord to an electric outlet.

CAUTION

When you have finished your sewing, always disconnect plug from electric outlet.

LIGHT

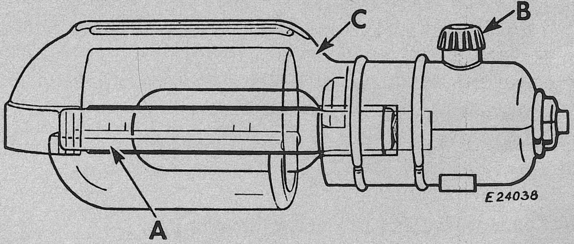


Fig. 3. SINGER Light*

To Turn Light "on" or "off"

Reach over machine arm and turn switch **B**, **Fig. 3** to right.

To Remove the Bulb

Grasp light socket so that thumb extends over switch **B**.

Press shade with thumb at **C** to release shade from two catches and slide it halfway out of shade holder **A**.

Press bulb into socket and at same time turn bulb over from machine as far as it will go to unlock pin **D** (see **Figs. 4** and **6**). Withdraw the bulb.

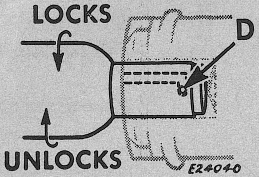


Fig. 4. Locking or Unlocking Bulb Pin

To Insert a New Bulb

Press bulb into socket and turn it over toward machine until pin **D** enters notch in socket (see **Figs.** 4 and 6).

Return shade to its normal position as shown in **Fig.** 3.

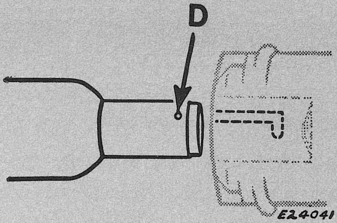


Fig. 5. Inserting Bulb in Socket

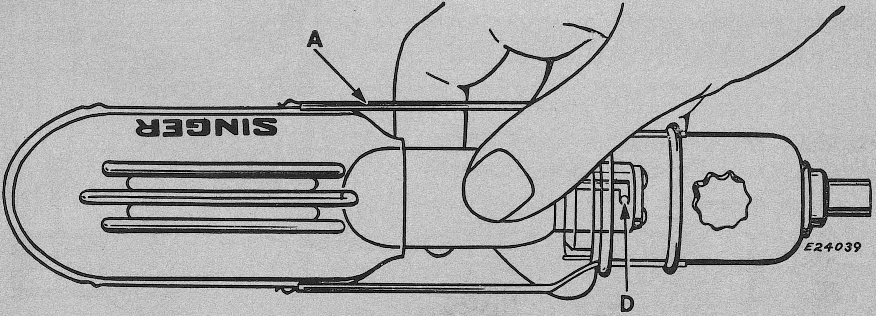


Fig. 6. Removing and Replacing the Bulb

NEEDLES AND THREAD

For perfect stitching, the **thread** should be selected according to the fabric to be stitched and the **needle** must be the correct size for the thread which must pass freely through eye of needle.

TO SET THE NEEDLE

Select the correct needle according to the chart on **page 9**. Be sure that needle is not blunt or bent. Raise needle bar to its highest position and loosen thumb screw **E** in needle clamp. Insert needle, **with its flat side to the left**, up into the needle clamp as far as it will go, then tighten thumb screw.

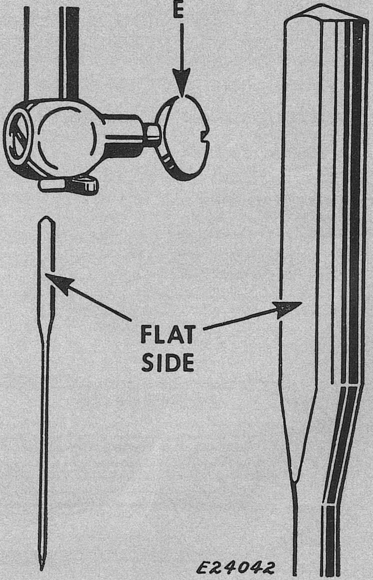


Fig. 7. Setting the Needle

CHART SHOWING THE RELATIONSHIP OF TYPES OF FABRICS, THREAD AND NEEDLE SIZES AND MACHINE STITCH SETTINGS

TYPES OF FABRICS	THREAD SIZES	NEEDLE SIZES	MACHINE STITCH SETTINGS	
			Inside Seams	*Top Stitching*
Filmy materials comparable to net, marquisette, chiffon, silk, organdy, ninon, silk velvet, nylon sheers.	100 Cotton 00 and 000 Silk	9	20	30
Sheer materials comparable to lawn, dimity, voile, batiste, rayon sheer, rayon crepe, silk crepe.	80 to 100 Cotton 0 Silk	11	16	20
Lightweight materials comparable to gingham, chambray, sheer wool crepe, taffeta.	50 Mercerized 60 to 80 Cotton A or B Silk	14	12	18
Medium lightweight materials comparable to poplin, pique, percale, chintz, faille, bengaline, wool flannel, wool crepe, wool jersey.	50 Mercerized 50 to 70 Cotton B Silk	14	12	16
Medium heavy materials comparable to crash, gabardine, rep, corduroy, velveteen.	50 Mercerized 40 to 50 Cotton C Silk	16	10	12
Heavy materials comparable to sailcloth, sturdy denim, ticking, drill cloth.	Heavy Duty Merc. 30 to 40 Cotton 24 to 30 Cotton D Silk	18 or 19 18 19 18 or 19	8	10
Very heavy materials comparable to overcoating.	40 to 60 Linen 20 to 24 Cotton E Silk	21	6	8
Plastic materials.	Mercerized Cotton	11	10	12

When ordering needles, always specify "Class and Variety 15 x 1" and state the size and quantity required.

You will obtain the best stitching results from your Sewing Machine if it is fitted with a SINGER Needle.*

TO OPERATE THE MACHINE

Raise presser foot **F** by means of presser bar lifter **G** to prevent injury to the foot **F** and feed **H.**

Place a piece of cloth under presser foot and let the foot down upon it.

Turn on electric current and, if the combination knee and foot controller is installed as a knee controller, press controller to the right, or, if controller is placed on the floor to be used as a foot controller, press down on pedal of controller. As the pressure on controller is increased, the speed of machine is increased, the speed being controlled entirely by amount of pressure on controller. Operate machine in this way, **without being threaded,** until you have become accustomed to guiding the material and operating the controller.

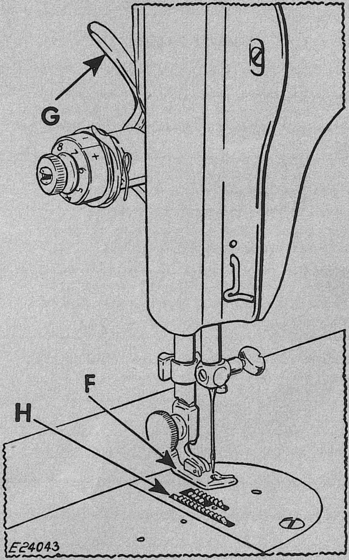


Fig. 8. Front View of Machine

UPPER THREADING

Raise take-up lever **5** to its highest point. Place spool of thread on spool pin at top of machine

Pass thread through thread guide **1**

Down, under and from back to front between tension discs **2** (thread guard **J** guiding thread between discs)

Hold spool tightly and pull thread against take-up spring **4** until it enters retaining fork **3**

Pass thread from back to front through hole **5** in take-up lever

Down through guide **6** on face plate

Into guide **7** on needle clamp

From **right to left** through eye **8** of needle.

Draw about two inches of thread through eye of needle with which to start sewing.

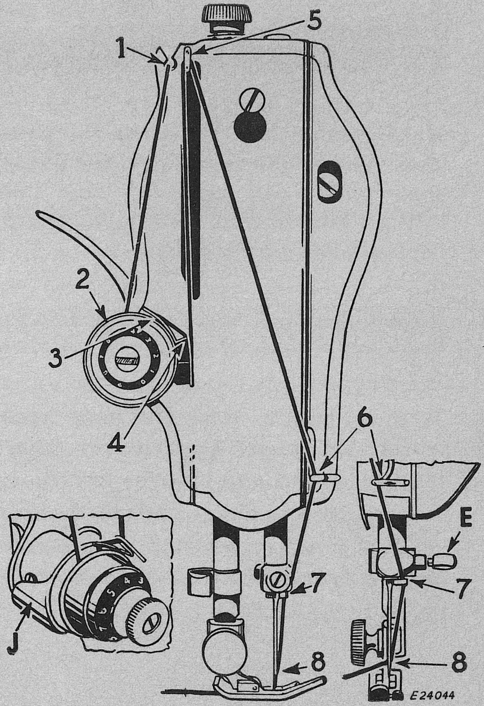


Fig. 9. Upper Threading

TO REMOVE THE BOBBIN

Raise take-up lever **5, Fig. 9** to its highest point. Withdraw the bed slide plate. Reach down with left hand and open bobbin case latch **K, Fig. 10.** Lift out bobbin case. Release latch and remove bobbin from bobbin case.

TO WIND THE BOBBIN

See Fig. 11

To stop motion of needle, hold hand wheel **L** and loosen knurled screw **M** by turning it over toward you.

Place bobbin on bobbin winder spindle as far as it will go, so that the small pin on spindle enters hole in side of bobbin.

Place spool of thread on spool pin **1**.

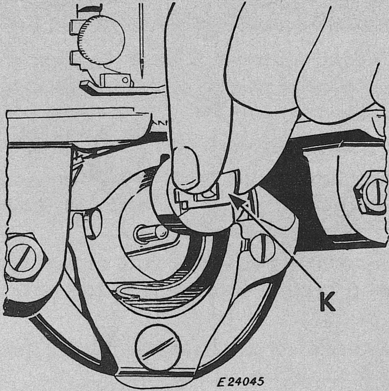


Fig. 10. Removing Bobbin Case

Draw thread under and between tension discs **2**.

Pass thread through hole in left side of bobbin **3**, from the inside.

Hold end of thread as shown in **Fig. 11** and press down on bobbin until bobbin winder latch drops down and holds bobbin winder pulley against hub of hand wheel.

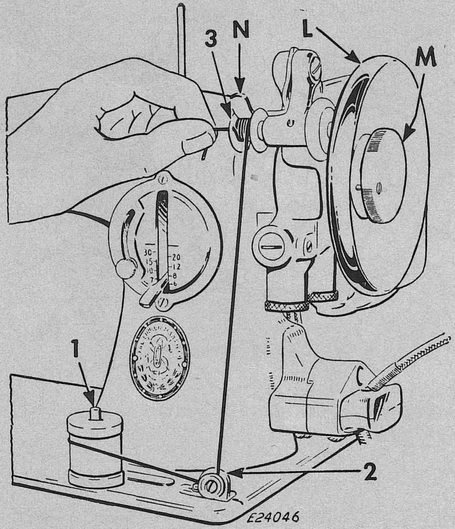


Fig. 11. Winding the Bobbin

Press controller pedal as for sewing. End of thread must be held until it breaks off.

Allow tension discs to control flow of thread so that it winds on bobbin in uniform, level rows.

The bobbin winder will stop automatically when the bobbin is filled.

Remove bobbin from spindle and tighten knurled screw **M.**

If pressure of bobbin winder pulley against hub of hand wheel is insufficient for winding the bobbin, press down bobbin winder until latch **N, Fig. 12** drops and holds it in position. Loosen adjusting screw **O, Fig. 12.** With forefinger, push back upper end of slotted plate **P** as far as it will go, as shown in **Fig. 12,** and at the same time, press bobbin winder pulley against hub of hand wheel. Tighten adjusting screw **O.** If thread does not wind evenly on bobbin, loosen screw which holds tension bracket **2, Fig. 11** in position.

Move bracket to the left if bobbin winds high on right; move bracket to the right if bobbin winds high on left. When bracket is properly centered, thread will wind evenly across bobbin.

Bobbins can be wound while machine is sewing.

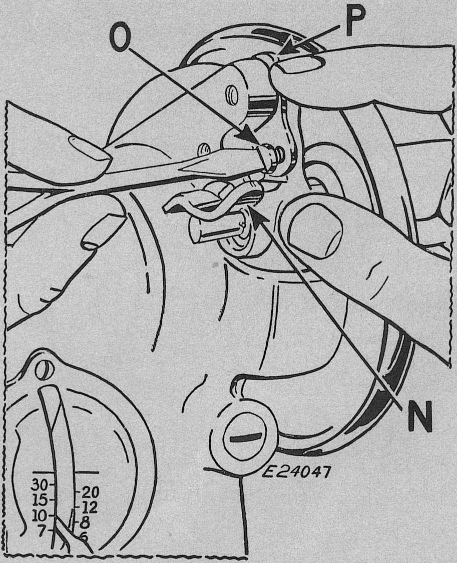


Fig. 12. Adjustment of Bobbin Winder

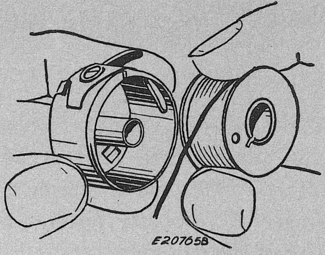
TO THREAD THE BOBBIN CASE

Hold bobbin so that thread will unwind in the direction shown in **Fig. 13.**

Hold the bobbin case as shown in **Fig. 13,** and place bobbin into it.

Pull thread into slot **1**, under tension spring **2** and into slot **3** at end of spring. Allow about three inches of thread to hang free from bobbin case.

Fig. 13



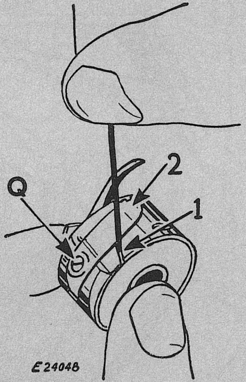


Fig. 14

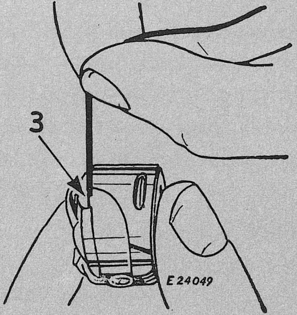


Fig. 15

TO REPLACE THE BOBBIN CASE

Hold bobbin case by latch and place it on stud **R** of shuttle body with position finger **S** opposite notch at top of shuttle race.

Release latch and press bobbin case back until latch enters groove in stud. Allow about three inches of thread to hang free from bobbin case and close bed slide plate.

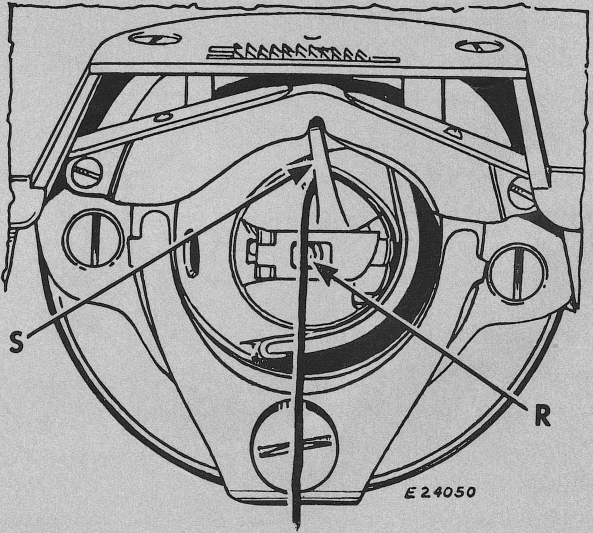


Fig. 16. Bobbin Case Threaded and Replaced

TO PREPARE FOR SEWING

Hold end of needle thread with left hand and turn hand wheel over toward you until needle goes down and up again and thread take-up lever **5, Fig. 19** is at its highest point. Pull up needle thread and bobbin thread will come with it, as shown in **Fig. 17.**

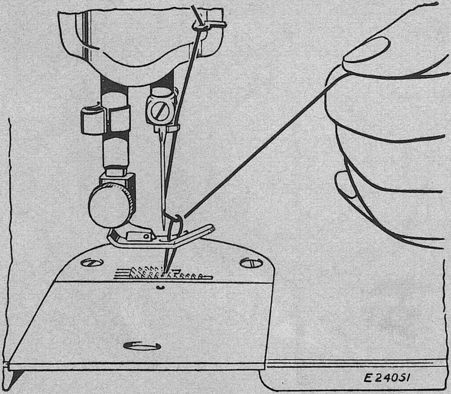


Fig. 17. Drawing Up Bobbin Thread

Lay both threads back under presser foot diagonally across the feed, as shown in **Fig. 18**, to the right or left, depending upon which side of needle the material is to be located, so that when presser foot is lowered, threads will be firmly held between the feed and the presser foot.

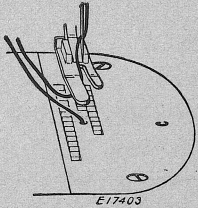


Fig. 18

TO START SEWING

Be sure to have the thread take-up lever **5** at its highest point.

Place material beneath presser foot **F**, turn hand wheel to bring point of needle into fabric and then lower the foot by means of presser bar lifter **G** and start to sew. Most materials require only guiding for best sewing results. However, the miracle fabrics such as nylons, dacrons, orlons, blends with various rayons, puffed weaves, sheers, jerseys and tricots, which, by their nature, require light pressure, also require support in the form of holding the material taut at the back and front of the needle as the needle enters the fabric. This support assures a smooth, even seam. Never pull the material along when stitching.

Never operate the machine without cloth under presser foot.

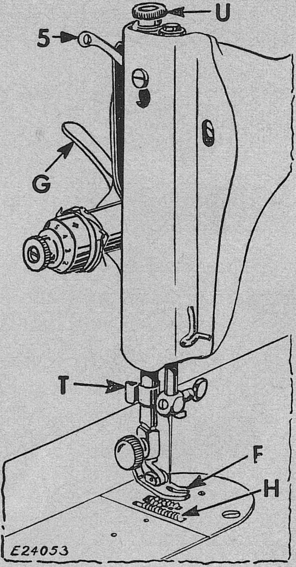


Fig. 19

The slide over the bobbin case should be kept closed when the machine is in operation.

The hand wheel must always turn over toward the operator.

TO REGULATE LENGTH OF STITCH

The machine is adjustable to make from 6 to 30 stitches per inch, as indicated by the numerals on stitch indicator plate **V**.

The number of stitches to the inch that the machine is set to make is indicated by the number which is in line with the upper side of stitch regulating lever **W**.

To change length of stitch, loosen thumb screw **X** and move it to bottom of slot. Move stitch regulating lever **W** until its upper side is in line with the number of the desired length of stitch.

Move thumb screw **X** until stitch regulating plate (inside) touches lever **W**. Tighten thumb screw **X**.

The machine will then make the indicated number of stitches to the inch in either a forward or reverse direction, depending on whether lever **W** is at its lowest or highest position.

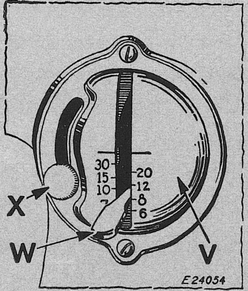


Fig. 20

BASTING

The longest stitch, No. 6 on the stitch regulator, adjusted by lever **W**, **Fig. 20**, is found satisfactory for basting. These basting stitches can be easily removed by clipping every sixth stitch and withdrawing the long, continuous thread.

Machine basting is firmer, more even and much quicker than hand basting.

TO SEW BIAS SEAMS

Use a shorter stitch when sewing bias or curved seams to increase the elasticity of the seam and to prevent seam failure under strain. No change in tensions is required.

TO TURN A CORNER

Pivot on eye of needle. Stop machine when needle is in this position. Raise presser foot, turn work as desired, lower the presser foot and resume sewing.

TO REMOVE THE WORK

Stop machine with thread take-up lever **5**, **Fig. 19** at its highest position. Raise presser foot, draw the fabric back and to the left, and sever the threads on thread cutter **T**, **Fig. 19**. Place ends of threads under presser foot, as shown in **Fig. 18**.

TO REGULATE DIRECTION OF FEED

To move the material from you, push down stitch regulator lever **W, Fig. 20** to the numeral of stitch desired.

To feed the material toward you, raise stitch regulator to the point where it will make the desired length of stitch.

The direction of feed can be reversed at any point of a seam without removing work from machine.

The reverse feed makes it easy to "back stitch" and to fasten ends of seams.

TO REGULATE PRESSURE ON PRESSER FOOT

Medium lightweight fabrics require an intermediate pressure. If sewing fine silk or filmy materials, lighten the pressure by turning thumb screw **U, Fig. 19** (on top of machine) over to the left so that it screws upward. If sewing heavy napped fabrics, increase pressure by turning this thumb screw over to the right so that it screws downward. The pressure should be only heavy enough to prevent side creeping of the material and still obtain a uniform stitch.

Pile fabrics require a lighter pressure than their appearance of thickness would indicate, and stitching should be in the direction of the nap on napped fabrics and in the direction of the pile on piled fabrics.

THREAD TENSIONS

For ordinary stitching, the needle and bobbin threads should be locked in the center of the thickness of the material, thus:

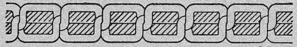


Fig. 21. Perfect Stitching

If the tension on the needle thread is too tight, or if that on the bobbin thread is too loose, the needle thread will lie straight along the upper surface of the material, thus:

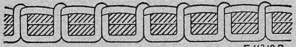


Fig. 22. Tight Needle Thread Tension

If the tension on the bobbin thread is too tight, or if that on the needle thread is too loose, the bobbin thread will lie straight along the under side of the material, thus:

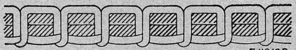


Fig. 23. Loose Needle Thread Tension

TO REGULATE THE NEEDLE THREAD TENSION

The tension on the needle thread should be regulated only when the presser foot is down.

The numerals "0" to "9" on dial **Y**, **Fig. 24** indicate the different degrees of tension that can be obtained. The numbers do not denote size of thread or ounces of tension.

When the tension has been correctly set for average sewing, note the number at indicator line **Z**, so that the tension may be reset should it be altered for special work or for change in size of thread.

To increase the tension, turn thumb screw **A2** gradually to the right (clockwise) until the required tension is obtained. Each **higher** number denotes increased tension.

To decrease the tension, turn thumb screw **A2** gradually to the left (counter-clockwise) until the required tension is obtained. Each **lower** number denotes less tension.

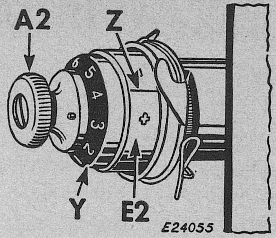


Fig. 24. Needle Thread Tension

TO REGULATE THE BOBBIN THREAD TENSION

The tension on the bobbin thread is regulated by screw **Q, Fig. 14, page 15,** in the tension spring on the outside of bobbin case. To increase the tension, turn screw **Q** over to the right. To decrease the tension, turn this screw over to the left.

When the tension on the bobbin thread has been once properly adjusted, it is seldom necessary to change it, as a correct stitch can usually be obtained by varying the tension on the needle thread.

TO REMOVE AND DISASSEMBLE NEEDLE THREAD TENSION

NOTE: The needle thread tension, Figs. 24 to 26 inclusive, is correctly adjusted at the factory to produce the complete range of tensions with one revolution of thumb nut A2. There should be no necessity for removing or taking this tension apart. However, if for any reason, it becomes necessary to remove the tension, proceed as follows:

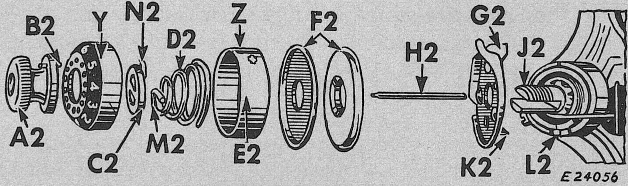


Fig. 25. Needle Thread Tension Disassembled

Turn thumb nut **A2, Fig. 24** away from you (toward the left) until it stops at "0" on numbered dial **Y**. Press in dial to disengage pin **B2** in thumb nut and remove thumb nut, dial, stop washer **C2**, tension spring **D2**, indicator **E2**, the two tension discs **F2**, thread guard plate **G2**, and tension releasing pin **H2**, as shown in **Fig. 25**. To remove pin **H2** from stud **J2**, take off face plate and tilt it so that pin will drop out.

TO REASSEMBLE AND REPLACE NEEDLE THREAD TENSION

Replace face plate, insert tension releasing pin in stud, place thread guard plate on stud, being sure that lug **K2, Fig. 25** engages the short recess **L2** to prevent plate from turning on stud. Next, replace the two tension discs **F2** on stud, having the flat thread-bearing sides of discs together. Replace indicator **E2** with the large open side facing end of stud so that the plus and minus signs will be readily seen from a sewing position as shown in **Fig. 26.** Insert tension spring **D2** in indicator so that first half turn **M2** of this spring will straddle lower half of tension stud. Guide stop washer **C2** onto stud so that extension **N2** will be above tension stud as shown in **Fig. 26.**

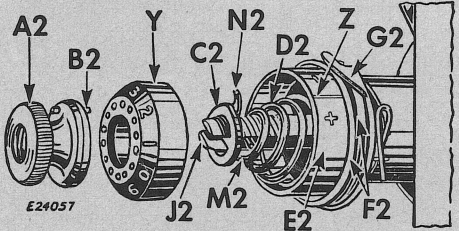


Fig. 26. Reassembling and Replacing the Tension

NOTE: If spring and stop washer are in correct position, extension **N2** will clear first half coil of spring as shown in **Fig. 27.**

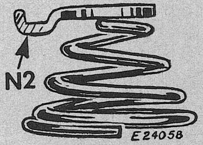


Fig. 27

Next place numbered dial on stud so that numeral 2 is opposite stop washer extension **N2**, then push dial to compress spring so that thumb nut can be turned onto stud, carefully guiding pin in thumb nut into one of holes in numbered dial. Lower presser bar and turn thumb nut **A2** to left until it stops at "0". Thread the tension and pull thread through tension discs to test amount of tension at "0" position. At this point there should be a barely perceptible pull on thread to indicate that there is a minimum tension, which gradually increases with the turn of thumb nut to right, providing a full range of tensions from light to heavy within one revolution of thumb nut. If pull is too strong for a minimum tension, press in numbered dial **Y** to disengage pin **B2** in thumb nut from dial and reset pin in one of holes to left of previous setting. This resetting of pin will produce less tension at zero. On the other hand, should there be insufficient tension at zero, press in dial **Y** and reset pin **B2** in one of holes to right of previous setting.

Repeat this process until the desired minimum tension is obtained.

If Correct Stitching is Not Obtained

If bobbin thread tension has been disturbed, or a correct stitch cannot be obtained without a very heavy or very light needle thread tension, then the following procedure is recommended:

Using size 50 mercerized thread in needle and on bobbin, adjust needle thread tension as instructed on **page 26.**

Then turn tension thumb nut to "4" and, with two thicknesses of thin material in machine, adjust bobbin thread tension, as instructed on **page 23**, until stitch is correctly locked in material as shown in **Fig. 21.**

A wide range of materials and threads can now be accommodated without further adjustment of bobbin thread tension.

SINGER Needles should be used
in **SINGER** Machines.
These Needles and their Containers
are marked with the
Company's Trade Mark "SIMANCO*"

Needles in
Containers marked
"FOR SINGER MACHINES"
are NOT
SINGER made needles.

Breaking of needles might be caused by:

1. Improper size of needle for thread and material. See **page 9.**
2. Needle bent.
3. Pulling of material when stitching.
4. Needle striking improperly fastened presser foot or attachments.
5. Crossing too thick seams with too small a needle.

Breaking of needle thread might be caused by:

1. A knot in the thread.
2. Improper threading. See **page 11.**
3. Upper tension too tight. See **page 22.**
4. Needle set incorrectly. See **page 8.**
5. Needle blunt or bent.
6. Thread too coarse for needle. See **page 9.**
7. Roughened hole in throat plate.
8. Improper arrangement of threads to start sewing. See **page 17.**

Breaking of bobbin thread might be caused by:

1. Improper threading of the bobbin case. See **page 15.**
2. Bobbin thread tension too tight. See **page 23.**
3. Bobbin wound unevenly.

Skipping of stitches might be caused by:

1. Improper setting of needles. See page 8.
2. Needle blunt or bent.
3. Needle too small for thread. See page 9.
4. Needle rubbing presser foot.

Free instruction for using the machine is gladly given at any

SINGER SEWING CENTER

DARNING AND EMBROIDERING

Turn machine back on its hinges. Unscrew as far as possible the thumb screw **P2, Fig. 28** which is located in the lower end of slot of feed lifting crank **Q2, Fig. 28.** The feed is thus rendered inoperative and will not interfere with the free movement of the work. Bring machine forward into place.

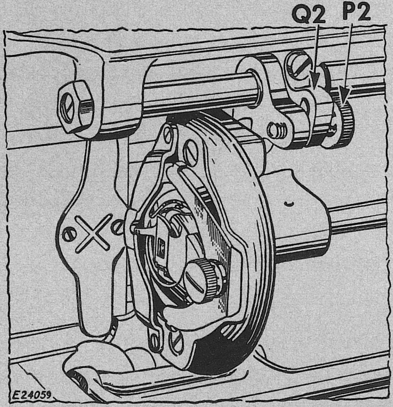


Fig. 28. Adjustment for Darning and Embroidering

Move stitch regulating lever **W, Fig. 20** to its neutral position in the center of slot at front of machine.

Remove presser foot and let down presser bar lifter **G, Fig. 19** to restore tension on needle thread which is released when lifter is raised.

Draw up bobbin thread as instructed on **page 17:**

When darning flat work, it is advisable to use embroidery hoops to hold the work.

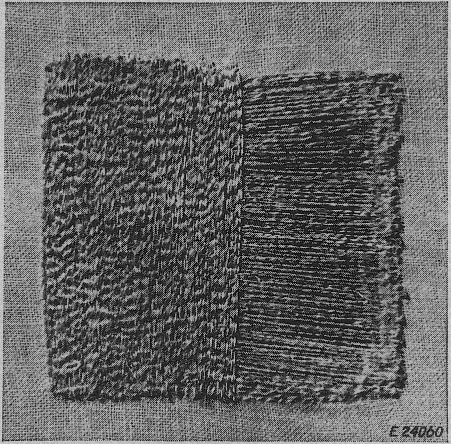


Fig. 29. Darning in Process

Place the work in machine, having the unworn part near the hole under the needle. Start darning by making a line of stitches across hole a little longer than width of hole. Continue making parallel lines of stitches across hole, moving the work backward and forward and at same time gradually moving the work sidewise until hole is covered with lines of stitches running across hole. Then start as before and move the work lengthwise of hole until the stitches across hole are completely covered and the darn is finished.

When you have finished darning or embroidering, raise presser bar lifter and replace presser foot. Turn machine back on its hinges and move thumb screw

P2, Fig. 28 down to bottom of slot of feed lifting crank **Q2, Fig. 28** and make sure that thumb screw is firmly tightened. Bring machine forward into place, return stitch regulating lever **W, Fig. 20** to its original position and the machine is ready for regular stitching. Stockings and socks, underwear, etc., can be more conveniently darned on the machine with the SINGER* Darner which can be purchased at any SINGER SEWING CENTER or from any SINGER Salesman.

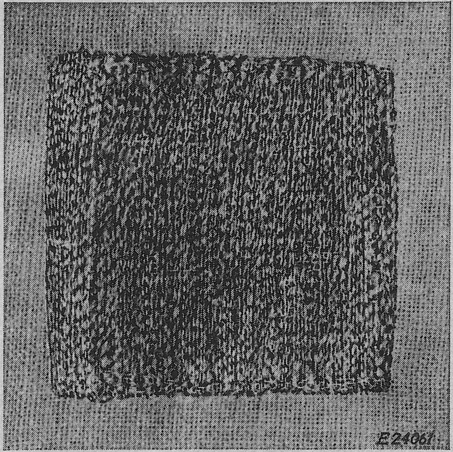


Fig. 30. Darning Finished

TO OIL THE MACHINE

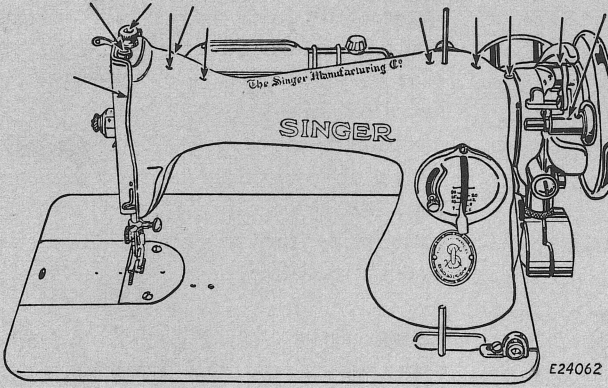


Fig. 31. Front View, Showing Oiling Points

If the machine is used continuously, it should be oiled daily. If moderately used, an occasional oiling is sufficient.

Apply one drop of oil at each of the places indicated by the unlettered arrows in **Figs. 31, 33** and **34.**

Draw to the left the bed slide plate, and after removing the lint and dust which may have accumulated (see instructions on **pages 35** and **36**), apply oil to the shuttle race **U2, Fig. 36.** The slide should then be closed.

Loosen thumb screw in the round cover plate at back of machine, turn plate upward and fasten by tightening the screw. Turn hand wheel over toward you until connecting rod **R2, Fig. 32** is at its highest position. Then apply a few drops of oil through hole in top of machine to the wick which is retained in cap of connecting rod, as shown in **Fig. 32**. Also oil the other moving parts inside, turn cover plate down and fasten it as before.

Loosen screw **S2, Fig. 33** near the upper end of face plate, raise plate and slip it off over head of screw. Apply one

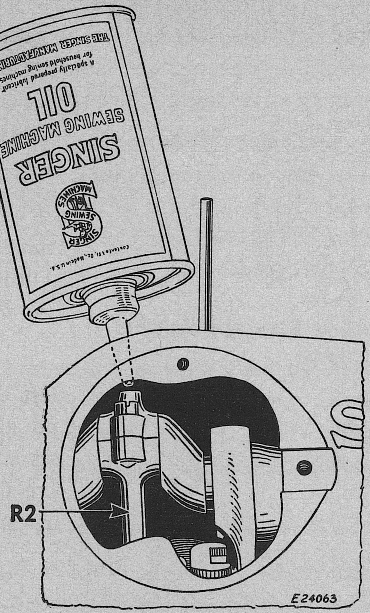

THE SINGER MANUFACTURING CO
A specially prepared lubricant for household sewing machines
OIL
SEWING MACHINE
SINGER
SINGER SEWING MACHINES
Contents 1 Fl. Oz., Made in U.S.A.
R2
E24063

Fig. 32. Oiling Points
At the Back of the Machine

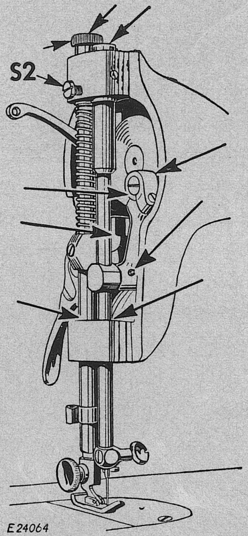


Fig. 33. End View Showing Oiling Points

drop of oil at each of the places indicated by the unlettered arrows in **Fig. 33**, then replace face plate and fasten it as before.

To reach parts underneath bed of machine, turn machine back on its hinges. Apply one drop of oil at each of places indicated by the unlettered arrows in **Fig. 34, page 36.**

Machine Working Heavily

If the machine runs hard after standing idle for some time, use a little kerosene in the oiling places, run the machine rapidly, then wipe clean and oil.

To Clean the Stitch Forming Mechanism

After considerable use, the stitch forming mechanism in bed of machine may

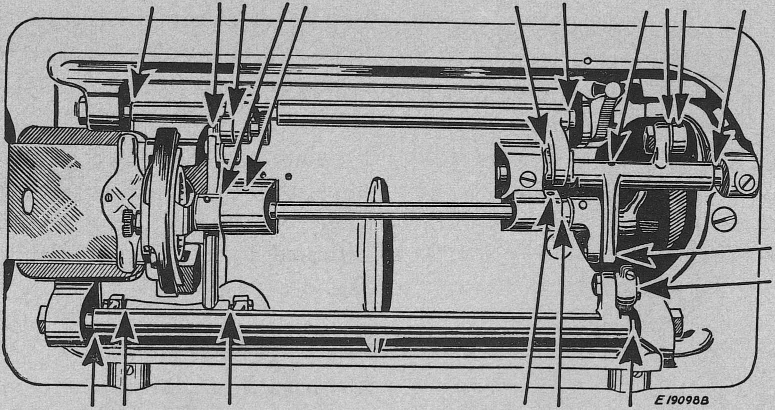


Fig. 34. Oiling Points in Base of Machine

become clogged with lint and this may interfere with the perfect operation of the machine.

Occasionally remove the shuttle from machine, as instructed on **page 38,** and remove any lint, etc., which has accumulated in machine.

TO LUBRICATE THE MOTOR

NEVER USE OIL OR ORDINARY GREASE FOR LUBRICATING THE MOTOR as they are harmful for this purpose. USE ONLY **SINGER*** Motor Lubricant, a tube of which is supplied with the machine. It is the only lubricant which will positively lubricate the motor.

When the machine is shipped from the factory, the two motor grease cups **T2, Fig. 35** are filled with sufficient **SINGER** Motor Lubricant for approximately one year's use. Refill these grease cups at least once a year thereafter.

Turn machine back on its hinges and remove the two thumb screws from the two grease cups **T2** and clean out interior of cups. Then insert tip of

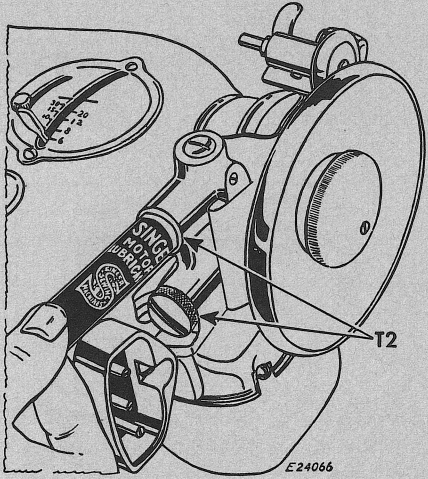
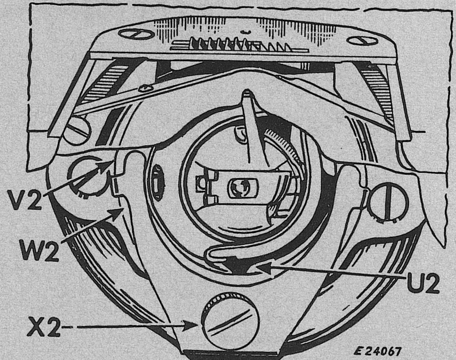


Fig. 35. Lubricating the Motor

motor lubricant tube into grease cups as shown in **Fig. 35** and while holding tube firmly against bottom of grease cups, squeeze enough grease into each cup to fill them. Replace and tighten thumb screws.

TO REMOVE THE SHUTTLE

Draw bed slide plate to the left. Turn hand wheel over toward you until needle is at its highest point and point of shuttle is at the position shown in **Fig. 36.**



Remove bobbin case and bobbin. Take out thumb screw **X2, Fig. 36,** also spring **W2, Fig. 36** and shuttle race back **V2, Figs. 36** and **37.** The shuttle **U2, Figs. 36** and **37** may now be easily removed and the parts cleaned.

Fig. 36. Showing Position of Shuttle For Removal from Machine

TO REPLACE THE SHUTTLE

See that needle is at its highest point. Replace shuttle with its point **U2** in position shown in **Fig. 36**, then replace the other parts in the order illustrated in **Fig. 37**. Replace and tighten thumb screw **X2**. Replace bobbin and bobbin case and close bed slide plate.

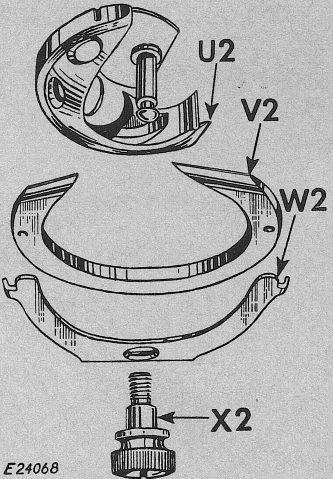


Fig. 37. Shuttle and Parts Removed From Machine

Instructions for using

THE ATTACHMENTS

THE FOOT HEMMER

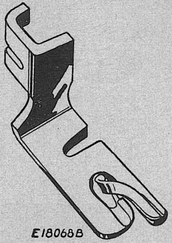


Fig. 38
Foot Hemmer

The foot hemmer may be used for hemming edge of material, making hemmed and felled seams and for hemming and sewing on lace in one operation.

Raise needle to its highest point, remove presser foot and attach foot hemmer to presser bar in place of presser foot.

Pull up bobbin thread as instructed on page 17.

To Start Hem at Very Edge

1. Fold edge of material twice, about ⅛ inch each time, for a distance of about two inches. Crease folds.
2. Lay about three inches of needle and bobbin threads back under hemmer. Place creased edge of material under hemmer with end of hem directly under needle. Lower hemmer and tack end of hem with two machine stitches.

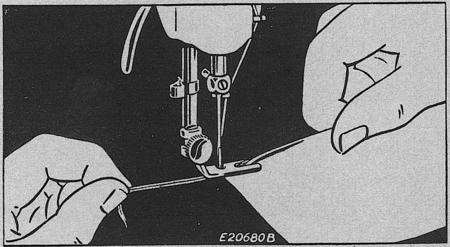


Fig. 39. Starting Hem at Very End of Material

3. Raise hemmer. Pull threads and hem slightly from you with left hand, then while holding threads, draw material toward you, with right hand, into scroll of hemmer until tacked end is caught in hemmer, as shown in **Fig. 39.**

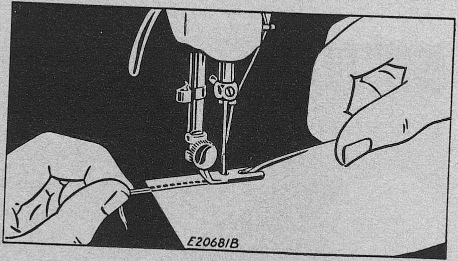


Fig. 40. Hemming Edge of Material and Pulling Back Threads While Sewing

4. Lower hemmer and start to sew, slightly pulling threads back while sewing. **Keep mouth of hemmer full to produce a smooth, even hem as shown in Fig. 40.**

To Make a Hemmed Seam with Foot Hemmer

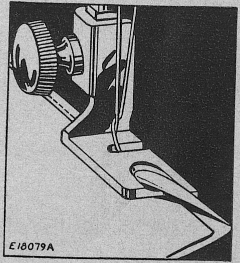


Fig. 41. Making a Hemmed Seam (First Operation)

1. When making this seam, the garment must first be fitted and the edge

of material trimmed, allowing for about ⅛ inch seam. Insert the two edges of material, right sides together, in the hemmer in same manner as a single hem as shown in **Fig. 41.** If the material is bulky, place edge of upper piece of material about ⅛ inch left of edge of under piece.

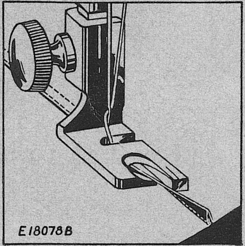


Fig. 42. Making a Hemmed Seam (Second Operation)

2. The free edge of hemmed seam may be stitched flat to garment, if desired. To do this, open the work out flat, wrong side up, then insert the hem in scroll of hemmer, holding edge of hem in position while it is being stitched. If seam is stitched flat to garment, one row of stitching is visible on the right side.

To Make a Felled Seam with Foot Hemmer

1. Place right sides of material together, having edge of upper piece about ⅛ inch to the left of edge of under piece. Stitch the two pieces together, using hemmer as a presser foot. Guide both pieces by the projecting toe of hemmer, as shown in **Fig. 43.**

2. Open the work out flat, wrong side up, and hem free edge of seam, stitching it flat to garment as shown in **Fig. 44.**

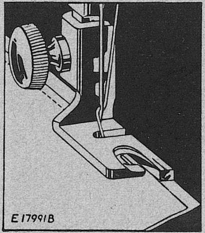


Fig. 43. Making a Felled Seam (First Operation)

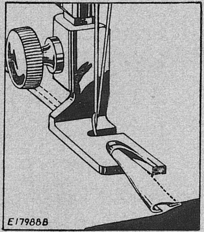


Fig. 44. Making a Felled Seam (Second Operation)

To Hem and Sew on Lace in One Operation

1. Start hem in regular way.
2. Hold hem in position with needle.
3. Raise presser bar and insert edge of lace in slot of hemmer and back under hemmer.
4. Lower presser bar and start sewing, catching edge of lace with needle.
5. Guide hem with right hand and lace with left hand, being careful not to stretch lace as it enters hemmer.

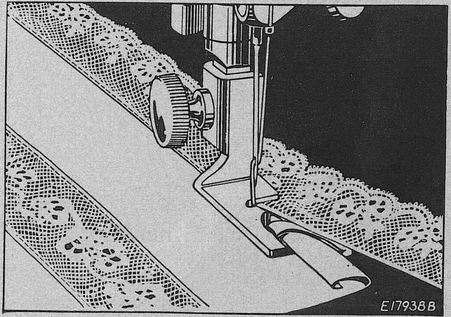


Fig. 45. Hemming and Sewing on Lace

ADJUSTABLE HEMMER

To Make Hems from 3/16 to 15/16 Inch Wide

1. Attach adjustable hemmer to presser bar in place of presser foot.
2. Pull up bobbin thread, as instructed on **page 17.**
3. Loosen thumb screw on hemmer and move scale until pointer registers with number of desired width of hem. (No. 1 indicates the narrowest hem and No. 8, the widest.) Then tighten thumb screw.
4. Place cloth in hemmer and draw it back and forth until hem is formed, as shown in **Fig. 46.**
5. Draw end of hem back under needle, lower presser bar and start to sew.
6. Guide sufficient cloth into hemmer to turn hem properly.

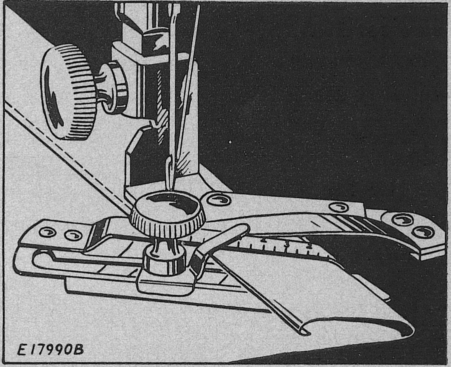


Fig. 46. Making Hem Up to 15/16 Inch Wide With Adjustable Hemmer

MULTI-SLOTTED BINDER

This multi-slotted binder will apply **unfolded bias binding** 15/16 inch in width and commercial **folded binding** in sizes **1, 2, 3, 4** and **5** to seams or to edges of garments. These sizes of folded binding are 1/4, 5/16, 3/8, 7/16 and 1/2 inch in width, respectively, and are fed through slots of corresponding sizes in the binder scroll. See **Fig. 47.** Binding may be purchased in a variety of materials and colors.

For convenience in determining the correct width of **unfolded binding** (15/16 inch), this measurement is marked on the binder, as shown in **Fig. 47.**

The two upright guide pins, shown in **Fig. 47** eliminate manual guiding of the binding.

The wide range of bindings that can be applied with this binder makes it useful for a large variety of work. It will be

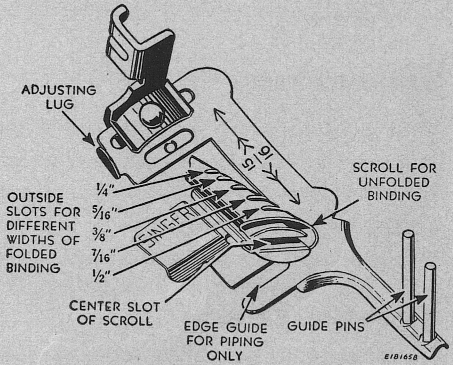

ADJUSTING LUG
15/16
SINGER
OUTSIDE SLOTS FOR DIFFERENT WIDTHS OF FOLDED BINDING
1/4"
5/16"
3/8"
7/16"
1/2"
SCROLL FOR UNFOLDED BINDING
CENTER SLOT OF SCROLL
EDGE GUIDE FOR PIPING ONLY
GUIDE PINS
E18165B

Fig. 47. Multi-Slotted Binder 160359

found particularly advantageous for making children's wear, lingerie, summer dresses, and other dainty articles which call for narrower bindings.

As two different widths of binding of contrasting colors can be fed through binder at same time, attractive binding and piping effects can be produced in one operation.

To Attach the Binder

Raise needle to its highest position.

Then attach binder to presser bar in place of presser foot.

See that needle enters center of needle hole.

To Insert Binding In Binder

Cut all binding to a long point to the left, as shown in **Fig. 48.**

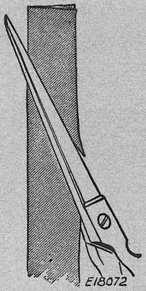


Fig. 48

Folded bias binding must be inserted in the slot or slots of corresponding sizes. See **Fig. 51.**

Unfolded or raw edge bias binding must be inserted in the open end of the scroll. See **Fig. 49.**

After inserting pointed end of binding in binder, push it through until full width of binding is under needle.

Guide binding by means of two upright pins, as shown in **Figs. 49** to **53.**

To Insert Garment in Binder

Place edge to be bound as far to right as it will go in center slot of scroll **C2,** as shown in **Fig. 49,** and draw it back under binder foot.

Lower binder by means of presser foot lifter, and start to sew. Keep material well within center slot of scroll so that edge will be caught in binding.

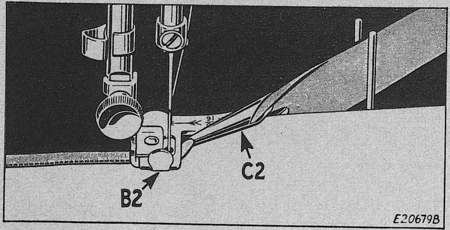


Fig. 49. Binding with Unfolded Binding

To Adjust the Binder

To bring inner edge of binding closer to the stitching, move scroll C2, **Fig. 49** to the right by means of lug **B2**, **Fig. 49**. This is the usual adjustment when binding straight edges.

When binding curves, move scroll to left to bring inner edge of binding farther from stitching and allow for sweep of curve.

Piped Edge

To produce a piped edge on garments, move lug **B2**, **Fig. 50** to left to bring

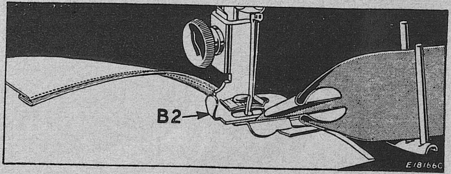


Fig. 50. Position of Garment and Binding When Piping Edges

stitching about midway of folded binding.

Crease raw edges of garment toward wrong side about ⅛ inch, and insert folded edge, raw edges uppermost, into edge guide on binder, and beneath binding.

When stitched, both sides of garment will be finished, and right side will show piped edge.

Piping and Binding in One Operation

A garment can be piped and bound in one operation, as shown in **Fig. 51.**

IMPORTANT: When piping and binding at same time, as shown in **Fig. 51,** insert **narrow width** of binding **first** in its slot, then insert **wider width** in its slot. **Two consecutive widths should not be used at same time.** That is, if No. 1 is used, wider binding should not be smaller than No. 3. If No. 2 is used, wider binding should not be less than No. 4. **Never use Nos. 1 and 2, or 2 and 3, etc., together.**

Use the upright guide pins to guide the wider of the two widths of binding, as shown in **Fig. 51.**

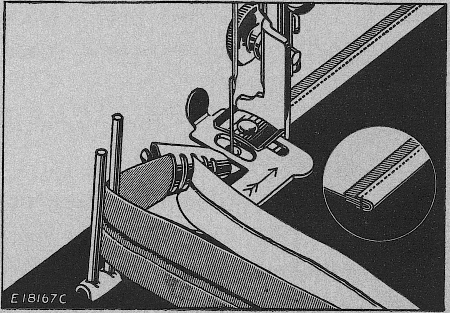


Fig. 51. Piping and Binding in One Operation

To Bind Outside Curves

Allow edge to be bound to pass freely through scroll without crowding against scroll wall. The material must be guided from back of binder and to left, permitting unfinished edges to swing naturally into scroll of binder.

Never pull binding while it is being fed through binder, as this may stretch binding, making it too narrow to stitch or to turn in the edges.

When binding curves, turn material only as fast as machine sews.

Do not push material in too fast as this will pucker edge.

Do not stretch material as this will distort edge so that curve will not have proper shape when finished.

If stitching does not catch edge of binding, adjust scroll slightly to the left.

To Bind Inside Curves

When binding an inside curve, straighten out edge of material while feeding it into binder, being careful not to stretch material.

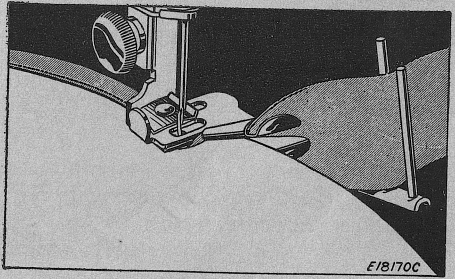


Fig. 52. Binding an Outside Curve

Soft materials, like batiste or crepe de chine, require a row of stitching added close to edge of curve before binding.

To Apply French Folds to Curves

Place material under binder and stitch binding onto face of material, as shown in **Fig. 53.**

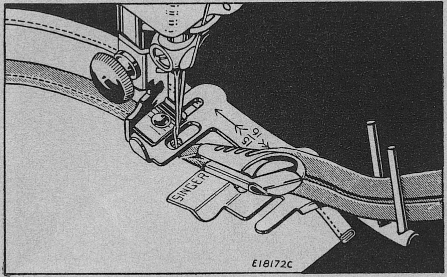


Fig. 53. Applying a French Fold

For guidance in applying rows of French folds, mark material with a line of basting stitches or with chalk or pencil.

THE EDGE-STITCHER

This useful attachment is fastened to machine in place of presser foot, and will be found an indispensable aid whenever stitching must be kept accurately on extreme edge of a piece of material. The slots, numbered from 1 to 5

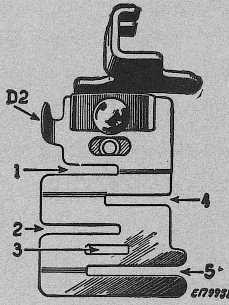


Fig. 54
The Edge-Stitcher

in **Fig. 54**, serve as guides for sewing together laces, insertions and embroideries, sewing in position hemmed or folded edges, piping or sewing flat braid to a garment.

To Adjust the Edge-Stitcher

Fasten this attachment to presser bar in place of presser foot.

Turn hand wheel slowly by hand to see that needle goes through center of needle hole.

The distance from line of stitching to edge of material in slots is regulated by moving lug **D2**, **Fig. 54** to right or left. If lug moves with difficulty, place a drop of oil under blue spring, then wipe it dry.

To Sew Lace Together

1. Insert one of the laces in slot **1** of edge-stitcher and the other in slot 4, **Fig. 54**.

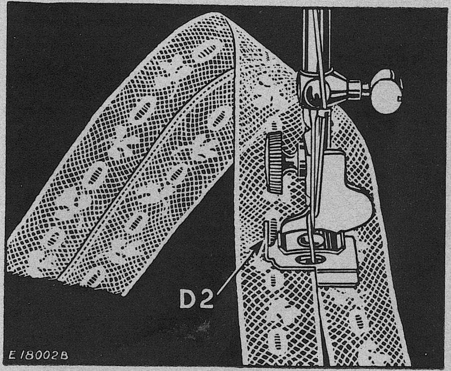


Fig. 55. Sewing Lace Together

2. Adjust lug **D2** until edges to be joined are caught by the stitching.
3. Slightly overlap edges of lace while stitching to keep them against ends of slots.
4. Loosen both thread tensions to avoid puckering of fine lace.

To Insert Lace or Ribbon

1. Fold edge of material to which lace or ribbon is to be sewn and insert it in slot **1**, **Fig. 54** of edge-stitcher.

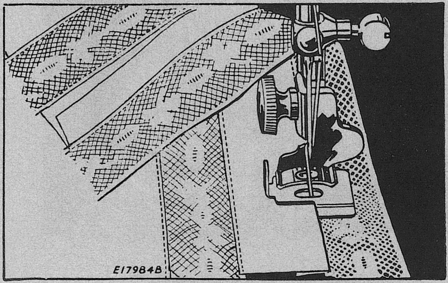


Fig. 56. Setting in Lace Insertion

2. Insert lace or ribbon in slot **4** of edge-stitcher and proceed to sew.
3. Cut away surplus folded material close to stitching.

To Pipe with Edge-Stitcher

1. Cut piping bias and twice width of slot **3** so that it can be folded once.
2. Insert piping with its folded edge to left in slot **3** and edge to be piped in slot **4**, **Fig. 54.**

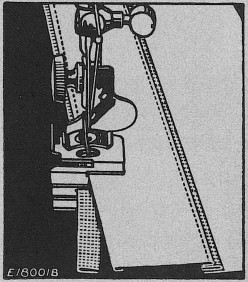


Fig. 57. Piping with Edge-Stitcher

To Apply Folded Bias Tape or Military Braid

1. Place garment under edge-stitcher and tape in slot **1** or **4, Fig. 54.**
2. To make square corners, sew to turning point, remove tape from attachment, form corner by hand, replace tape and continue stitching. See **Fig. 58.**
3. To space two or more parallel rows, mark material with a guide line, using a crease, chalk or basting thread.

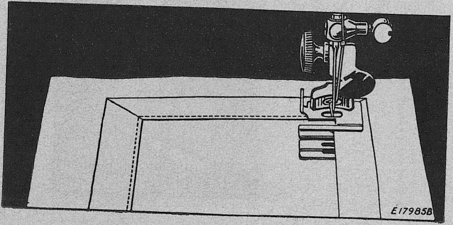


Fig. 58. Applying Bias Folded Tape

To Stitch a Wide Hem

1. A wide hem may be stitched evenly on sheets, pillow slips, etc., with edge-stitcher after hem has been measured and edge turned.
2. Insert edge in slot **5, Fig. 54,** and adjust lug **D2** to stitch as close to edge as desired.

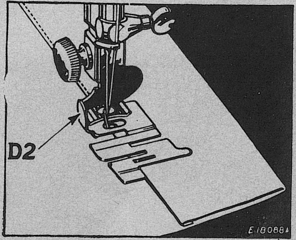


Fig. 59. Making a Wide Hem

To Make a French Seam

1. To make a French seam of uniform width, insert two edges to be joined, wrong sides together, in slot **1** or **2**, **Fig. 54**, and stitch close to edge.
2. Fold both right sides together and insert back of seam in slot **1**, as shown in **Fig. 60**, and stitch, allowing just enough margin to conceal raw edges.

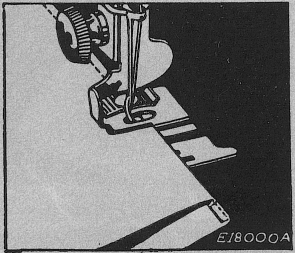


Fig. 60. Making a French Seam (Second Operation)

To Tuck with Edge-Stitcher

The maximum width of tuck that can be made with edge-stitcher is 1/8 inch.

1. Fold and crease material for desired width of tuck.

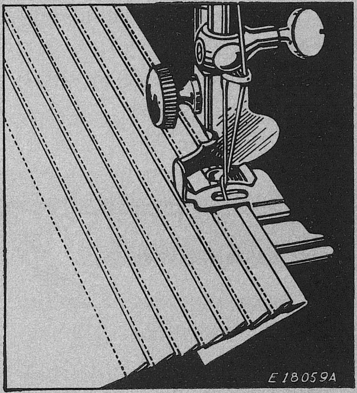


Fig. 61. Tucking with Edge-Stitcher

2. For succeeding tucks, fold material the desired distance from previous tuck, running the fold lengthwise over a straight edge, then crease folds.
3. Insert creased folds in slot **1, Fig. 54** and adjust edge-stitcher to right or left for the desired width of tuck. Use a light tension, short stitch and fine thread and needle.

GATHERING FOOT

To Shirr with Gathering Foot

1. Fasten gathering foot to presser bar in place of presser foot.
2. Place material under gathering foot and stitch in usual way.
3. The fullness of shirring or amount of gathering is regulated by length of stitch. A longer stitch increases fullness of gathers.

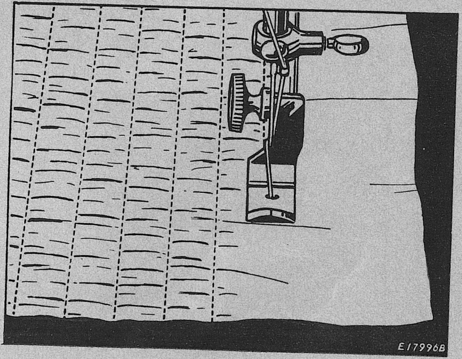


Fig. 62. Shirring with Gathering Foot

THE RUFFLER

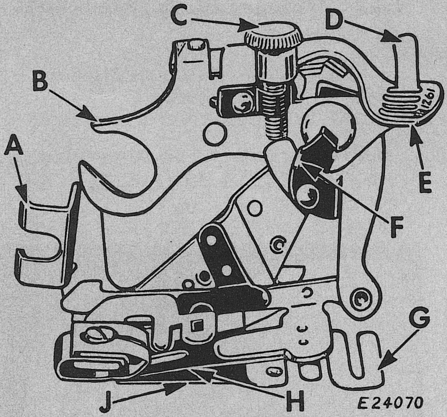


Fig. 63. Principal Parts of Ruffler

A—**Foot**—attaches ruffler to presser bar.

B—**Fork Arm**—straddles needle clamp.

C—**Adjusting Screw**—regulates fullness of gathers.

D—**Projection**—engages slots in adjusting lever.

E—**Adjusting Lever**—sets ruffler for gathering or for making a pleat once at every 6 stitches or once every 12 stitches as desired; also for disengaging ruffler, when either pleating or gathering is not desired.

F—**Adjusting Finger**—regulates width or size of pleats.

G—**Separator Guide**—contains slots into which edge of material is placed to keep heading of ruffle even. Also for separating material to be ruffled from material to which ruffle is to be attached.

H—**Ruffling Blade**—pushes material in pleats up to needle.

J—**Separator Blade**—prevents ruffling blade teeth from contacting feed or material to which ruffle or pleating is applied.

To Attach Ruffler

1. Raise needle to its highest point.
2. Loosen presser foot thumb screw and attach ruffler to presser bar in place of presser foot, at same time placing fork arm **B** astride needle clamp.
3. See that needle enters center of needle hole in ruffler.

To Adjust Ruffler for Gathering

1. Swing adjusting finger **F** away from needle.
2. Raise adjusting lever **E** and move it until projection **D** can be entered in slot marked "1".

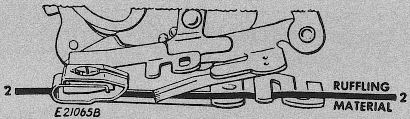


Fig. 64. Correct Position for Material to be Ruffled

3. Insert material to be ruffled between two blue blades **Line 2, Fig. 64.**

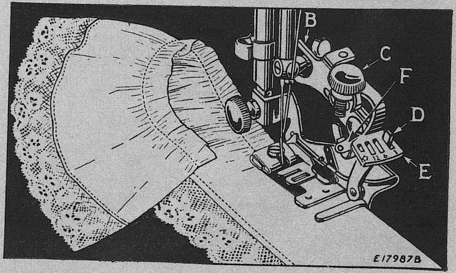


Fig. 65. Gathering with Ruffler

4. Draw material slightly back of needle, lower presser bar and start to sew.
5. For fine gathering, turn adjusting screw C upward and shorten stitch.
6. For full gathering, turn adjusting screw C downward and lengthen stitch.

To Make a Ruffle and Sew It to a Garment In One Operation

1. Insert material to be ruffled between two blue blades **Line 2, Fig. 66.**

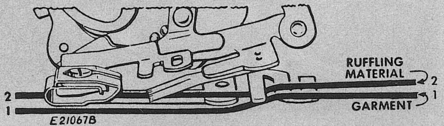


Fig. 66. Correct Positions for Materials

2. Place material to which ruffle is to be attached under separator blade **Line 1, Fig. 66.**
3. Proceed same as for plain gathering.

To Make a Ruffle and Attach It With a Facing in One Operation

1. Insert material to be ruffled between two blue blades **Line 2, Fig. 68.**

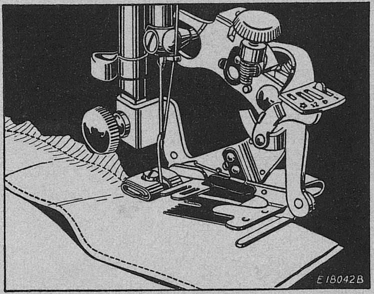


Fig. 67. Making a Ruffle and Attaching It In One Operation

2. Place material to which ruffle is to be attached under separator blade **Line 1, Fig. 68.**
3. Place facing material over upper blue blade **Line 4, Fig. 68.**

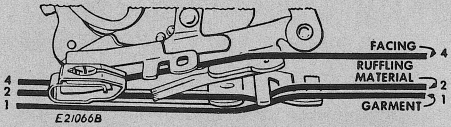

FACING 4
RUFFLING MATERIAL 2
GARMENT 1
4
2
1
E21066B

Fig. 68. Correct Positions for Materials

4. If facing is to be on right side of garment, place wrong sides of garment and ruffle together.
5. If facing is to be on wrong side, place right sides of garment and ruffle together.

To Pipe a Ruffle

1. Insert material to be ruffled between two blue blades **Line 3, Fig. 70.**

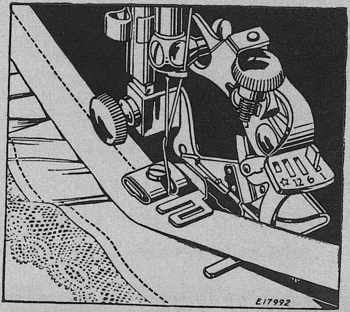


Fig. 69. Making a Ruffle and Attaching It With a Facing In One Operation

This material must not exceed 1¼ inches in width.

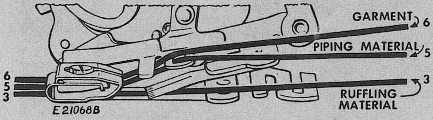

GARMENT 6
PIPING MATERIAL 5
RUFFLING MATERIAL 3
6
5
3
E21068B

Fig. 70. Correct Positions for Materials

2. Piping material is usually cut on the bias and it should be about ¼ inch wide when folded in center. Place piping material in ruffler, following **Line 5, Fig. 70** with folded edge of piping to the right.

3. Fold edge of material to which piping and ruffling are to be attached and insert it in ruffler, following **Line 6, Fig. 70.**

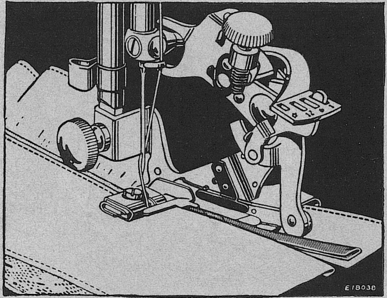


Fig. 71. Piping a Ruffle

To Adjust Ruffler for Pleating

1. Raise adjusting lever **E** and move it until projection **D** can be entered in slot marked "6". The ruffler will then pleat once every six stitches. To pleat once every 12 stitches, have projection **D** enter slot "12" in adjusting lever **E.**

2. Insert material to be pleated between two blue blades **Line 2, Fig. 72.**

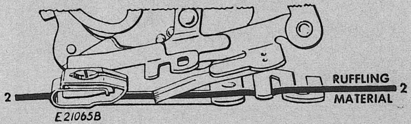


Fig. 72. Correct Position for Material

3. To increase width of pleat, move adjusting finger **F** back toward needle and turn adjusting screw **C** downward. To make a smaller pleat, turn adjusting screw **C** upward. The distance between pleats is regulated by length of stitch.

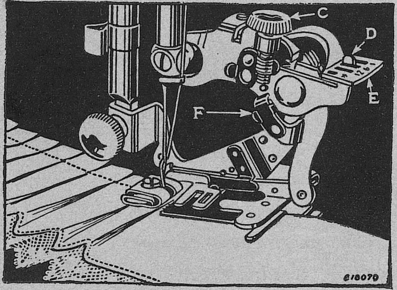


Fig. 73. Pleating with the Ruffler

To Adjust Ruffler for Group Pleating

1. To make the space between groups of pleats, raise adjusting lever **E** and move it until projection **D** can be entered in small slot indicated by star on adjusting lever **E**. The ruffler will then stop pleating and plain stitching will be made.

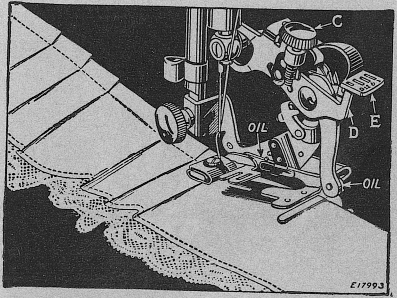


Fig. 74. Group Pleating with Ruffler

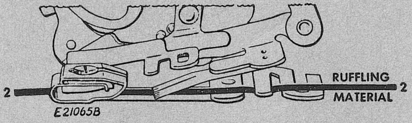


Fig. 75. Correct Position for Material

2. When the desired space is made, set projection **D** in either of slots 6 or 12.

3. Insert material to be pleated between two blue blades **Line 2, Fig. 75.**

To Oil the Ruffler

Occasionally apply a drop of oil to the working parts of ruffler at each place indicated in **Fig. 74.**

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